# 7-Chlorokynurenic acid

**Cat. No.:** HY-100811

**CAS No.:** 18000-24-3

**Molecular Formula:** $C_{10}H_6ClNO_3$

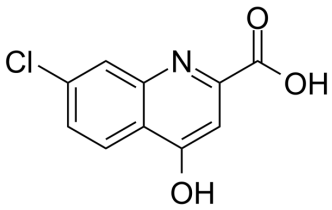
**Molecular Weight:** 223.61

**Target:** iGluR

**Pathway:** Membrane Transporter/Ion Channel; Neuronal Signaling

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 14.29 mg/mL (63.91 mM; Need ultrasonic)

$H_2O$ : < 0.1 mg/mL (insoluble)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 4.4721 mL | 22.3604 mL | 44.7207 mL |
| 5 mM | 0.8944 mL | 4.4721 mL | 8.9441 mL |
| 10 mM | 0.4472 mL | 2.2360 mL | 4.4721 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.43 mg/mL (6.40 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

7-Chlorokynurenic acid (7-CKA) is a potent and selective antagonist of the glycine B coagonist site of the N-methyl-D-aspartate (NMDA) receptor ($IC_{50}$=0.56 μM). 7-Chlorokynurenic acid is also a potent inhibitor of the reuptake of glutamate into synaptic vesicles with a $K_i$ of 0.59 μM. 7-Chlorokynurenic acid has potent antinociceptive actions after neuraxial delivery [1][2].

**$IC_{50}$ & Target**

Ki: 0.59 μM (reuptake of glutamate)[1]

IC50: 0.56 μM (Glycine B coagonist site of NMDA receptor)[2]

**In Vivo**

Male Sprague-Dawley rats pretreated with 7-Chlorokynurenic acid (10 nM) shows a significant retardation of development of both the electroencephalographic and motor (17.7±2.9 daily stimulations) components of the seizure response[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## REFERENCES

[1]. Kemp JA, et al. 7-Chlorokynurenic acid is a selective antagonist at the glycine modulatory site of the N-methyl-D-aspartate receptor complex. Proc Natl Acad Sci U S A. 1988 Sep;85(17):6547-50.

[2]. Yaksh TL, et al. Characterization of the Effects of L-4-Chlorokynurenine on Nociception in Rodents. J Pain. 2017 Oct;18(10):1184-1196.

[3]. Croucher MJ, et al. 7-Chlorokynurenic acid, a strychnine-insensitive glycine receptor antagonist, inhibits limbic seizurekindling. Neurosci Lett. 1990 Oct 2;118(1):29-32.



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